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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,613	03/08/2002	Lars J. Stenberg	45900-000561/US	8641

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EXAMINER

GRIER, LAURA A

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/092,613	Applicant(s) STENBERG, LARS J.	
	Examiner Laura A Grier	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,13,14,16,17 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10,13,14,16,17 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 11 and 12 is withdrawn in view of the newly discovered reference(s) to Madaffari. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 13-14, 16, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari et al., U. S. Patent No. 5589799.

Regarding claim 1, Madaffari et al. (herein, Madaffari) discloses an amplifier for a microphone. Madaffari's disclosure comprises a preamplifier circuit including capacitor (38) coupled in series between an electret based condenser microphone via inputs terminals (12 and 14), and DC source (22) coupled to terminals 24/26, the preamplifier comprises a gate biased impedance circuit that includes a pair of diodes (46/48), which obvious provides a gigaohm impedance value of hundreds of gigaohms as evident by the fact that diodes 46 and 48 function similarly to diodes 40 and 42 (col. 3, lines 16-29, and 40-47), which reads on a series capacitor, a DC input, and an amplifier having PN diodes and an impedance greater than or equal to 1 Gigaohm, therein.

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Regarding claim 2, Madaffari discloses everything claimed as applied above (see claim 1). Madaffari discloses that capacitor 38 (col. 4, lines 14-19), which indicates blocking DC, therein.

Regarding claim 13, Madaffari discloses everything claimed as applied above (see claim 1). Madaffari obviously discloses gigaohm impedance value of hundreds of gigaohms as evident by the fact that diodes 46 and 48 function similarly to diodes 40 and 42 (col. 3, lines 40-47), which reads on an impedance greater than or equal to 100 Gigaohms

Regarding claim 14, Madaffari discloses everything claimed as applied above (see claim 1). Madaffari further discloses a resistor (50), which reads on the impedance circuit comprising a resistor.

Regarding claim 16, Madaffari discloses everything claimed as applied above (see claim 1). Madaffari further discloses an electret based condenser microphone (col. 3, lines 16-20), which reads on the preamplifier circuit amplifying an electric signal from an electric condenser microphone (ECM).

Regarding claim 34, Madaffari discloses everything claimed as applied above (see claim 1). Madaffari further discloses the microphone for a hearing aid which obvious indicates a miniature microphone comprising the preamplifier circuit.

4. **Claim 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari and Garcia.

Regarding claim 3, Madaffari fails to disclose the amplifier and/or capacitor integrated as a monolithic chip. Garcia discloses a signal input (28), which may be an input of a microphone, which is coupled with a capacitor (12) with an input into and amplifier (30), wherein the circuitry may be integrated as a monolithic chip (col. 9, lines 44-52, col. 10, lines 1-6).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari by integrally configuring the amplifier and/or capacitor on a monolithic chip for utilization in compact and portable devices such as a hearing aid, cellular and other portable telephones, etc as taught by Garcia.

However, Madaffari and Garcia fail to disclose the capacitor external to the monolithic chip. The position of various components of a circuit is known to vary for integrated circuits. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari and Garcia by applying the capacitor external the monolithic chip as desired for the purpose of optimizing the size/structure and function of the chip.

5. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari in view of Garcia.

Regarding claim 4, Madaffari discloses everything claimed as applied above (see claim 1). However, Madaffari fails to disclose the amplifier and/or capacitor integrated as a monolithic chip. Garcia discloses a signal input (28), which may be an input of a

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microphone, which is coupled with a capacitor (12) with an input into and amplifier (30), wherein the circuitry may be integrated as a monolithic chip (col. 9, lines 44-52, col. 10, lines 1-6).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari by integrally configuring the amplifier and/or capacitor on a monolithic chip for utilization in compact and portable devices such as a hearing aid, cellular and other portable telephones, etc as taught by Garcia.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari and Garcia.

Regarding claim 5, Madaffari and Garcia disclose everything claimed as applied above (see claim 4). However, Madaffari and Garcia fail to disclose the monolithic chip made in a modern IC technology comprising one of a CMOS, JFET, P- or N-type MOSFET and MESFET. The examiner takes official notices that such IC technology such as the CMOS and MOSFETs were well known the art for configuring monolithic chips for amplifier. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari and Garcia by implementing the monolithic chip with CMOS or MOSFETS, which are commonly used components in the art, for the purpose of ensuring low distortion and efficient noise reduction in the signal transmission.

7. **Claims 6-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari in view of Wang and Sun.

Regarding claims 6-10, Madaffari discloses everything claimed as applied above (see claim 1). However, Madaffari fails to disclose the capacitor as a low leakage capacitor of the floating plate type made as a polysilicon-to polysilicon, polysilicon-to-metal, and metal-to-metal capacitor or a combination thereof (herein, various material structure) compatible to modern IC technology.

Regarding the low leakage capacitor of the floating plate type and the various material structure, Wang discloses a semiconductor device with capacitor which has a floating layer, which indicates a floating plate type, wherein the capacitor may be composed of polysilicon-to-polysilicon, polysilicon-to-metal (or alternately, metal-to-polysilicon) or metal-to-metal electrodes (col. 3, lines 1-14, col. 4, lines 53-67), which reads on the various material structures compatible to modern IC technology.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari by providing a capacitor of the floating plate type which may be composed of the various material structures for the purpose of enabling various integrated circuit techniques that are commonly used in the art as taught by Wang.

Further in the respect to the low leakage characteristic of the capacitor, Sun discloses a capacitor with low leakage characteristic for semiconductor devices (abstract).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari and Wang by implementing a low leakage characteristic capacitor for the purpose of enable a small or low leakage of current to the amplifier.

8. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Madaffari in view of Rombach.

Regarding claim 17, Madaffari disclose everything claimed as applied above (see claim 1). However, Madaffari fails to discloses an electrical signal from a silicon-based condensor microphone.

Regarding the silicon-based condensor microphone, Rombach discloses a solid state silicon-based condensor microphone (abstract).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Madaffari by providing a silicon-based condensor microphone for the purpose of enabling a transducer that less sensitive to electrical interference.

Response to Arguments

9. Applicant's arguments with respect to claims 1-10, 13-14, 16-17 and 34 have been considered but are moot in view of the new ground(s) of rejection.

The applicant made remarks in respect the amended claim language in respect to previously objected to subject matter. However, in respect to further search and

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consideration, a new rejection as been set forth. The reference of prior art, Madaffari disclose the concepts of the claimed invention with a microphone with a preamplifier, a capacitor, a pair of diodes providing the claimed impedance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (571) 272-7518. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh N Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Laura A. Grier
April 19, 2005